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ABSTRACT

Since imaginative play has been found to be related to multiple social and cognitive skills, it is important to explore possible family variables that are significantly related to such behavior. The purpose of the study was to examine the level of imaginative and social play of children in relation to three family issues: (a) family structure (single- versus dual-parent household), (b) mothers' level of stress, and (c) mothers' beliefs and attitudes about play. Forty children, ranging in age from 4 years to 5 years and 11 months, and their mothers participated in the study. Of these children, 20 lived in dual-parent families and 20 in single-parent families. Two observational instruments were used to collect data on the play of children: the Peer Play Scale, which measures social play, and the Play Observation Scale, which measures imaginative play. The mothers were administered the following instruments: Parent's Attitude about Play and Development, Home/Play Environment Inventory, and the Parent Stress Index. Results indicated there was no significant main effect for family structure. However, children from single- and dual-parent homes exhibit different play behaviors with regard to varying levels of maternal stress. Parents' attitudes toward play affected children's play behaviors in various ways. Parent participation significantly reduced the likelihood of simple play for children who were exploring, repeating physical movements, and playing with language. (BN)

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An Investigation of Children's Imaginative and Social Play
in Relation to Family Structure, Maternal Stress,
and Attitudes About Play

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An Investigation of Children's Imaginative and Social Play
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The past two decades have witnessed growing interest in the role of imaginative play in child development, prompting numerous research studies on the effects and correlates of playful behavior (Curry & Arnaud, 1975; Piaget, 1962; Singer, 1977). For example it was found that children engaging in imaginative play or who were trained to play in imaginative ways tended to be more creative on assigned manipulative tasks (Dansky, 1980; Smith & Syddall, 1978). In a similar vein, divergent thinking was explored and found to be related to pretend play (Johnson, 1976; Pepler, 1979).

More recently in the last ten years, imaginative play as a psychological construct has been analyzed and recognized as valuable in the development of children (Dansky, 1980; Rubin & Pepler, 1980; Yawkey, 1981). For example, imaginative play has been linked to a whole variety of developmental constructs: symbolism, language forms, coping with stress and personal conflicts, and other social skills (Garvey, 1974, 1977; Cazden, 1974).

Since imaginative play has been found to be related to multiple social and cognitive skills, it is important to explore possible family variables that are significantly related to such behavior. For example, family structure is an important variable and is a changing issue in our society. Many families are dissolved as a result of a parental death, divorce, or separation. The number of parents in the household has decreased primarily because of divorce. The number of adult role models in the home has been

found to be an important issue in child development (). In addition, the number of stressors facing young families are multiple, and in turn relate to the child's development. For example, family stress has been found to be related to a decrease in children's language (Pasley & Gecas, 1981). Finally, parental attitudes have been shown to have a relationship to outcome behaviors in young children. For example, permissive attitudes of the parent have been shown to be related to exploratory behaviors in young children (Bishop & Chace, 1971).

The purpose of the study was to examine the level of imaginative and social play of children in relation to three family issues: (a) family structure (single parent household versus dual parent household), (b) mothers' level of stress, and (c) mothers' beliefs and attitudes about play.

First, research shows limited information on how the single and dual parent households influence and relate to children's play behavior. A single-parent household versus an intact dual-parent home has different interactions among family members (Bane, 1976). A large number of single-parent families are the result of divorce or separation. Numerous studies have reported disruptions in children's social and cognitive behaviors due to divorce (e.g., Hetherington & Cox, 1979; Brown, 1980; Deutsch, 1983; Stolberg & Anker, 1984; Fuller, 1982). Children's cognitive and social play needs examination with respect to the number of parents in the family system. Because different parenting practices do exist in single and dual parent families which influence the child (Wallerstein & Kelly, 1980).

Second, imaginative play needs to be examined in relation to the mother's level of experienced stress because parental stress correlates negatively with

children's behaviors (Wallerstein, 1980; Zelkowitz, Saunders, Longfellow, & Belle, 1979). Acting out, disruptive behavior, low self esteem, anxiety, tantrums, and aggression have been found to be related to stress in the home (Gardner, 1976; Hodges, Buchsbaum & Tierney, 1985; Weinraub & Wolf, 1983). The stress of parenting is well documented (Eiduson, 1981; Bane, 1976; Hetherington & Cox, 1979; Adimin, 1983). The events experienced by a family suggest and directly influence the behavior of the preschool child. Specifically, the personal psychological problems in a parent-like depression or severe stress are significantly related to the psychological problems and social behavior of children (Stolberg & Anker, 1984).

Third, few studies have shown clear connections in how parental attitudes toward children's play affect and influence the play. Parents do provide role models and may influence imaginative play through responsive acceptance or rejection of the particular behavior. For example, acceptance behavior of the mother has been found to be significantly related to positive children's behavior (Ainsworth, 1985). Other studies (Johnson, 1978; Lieberman, 1977; Singer, 1977) have suggested that parents contribute to their children's play by interacting with them in imaginative ways. Studies have demonstrated (Erikson, 1950; Broffenbrenner & Cochran, 1976) that in all facets of functioning, children's competency is affected by what parents do with them during the early years (Garvey, 1974; Bloom, 1961; Fagot, 1973).

Finally, the statistical procedures of past research isolated single family variables such as structure or attitude in efforts to explain or describe differences in children's imaginative play. As a result of this isolation of single variables, valuable information was lost because possible

interactions between variables were not considered, and the possibility of other variables contributing to the relationship were not carefully examined.

In sum, four major relationships were explored in the investigation. Would there be differences in imaginative and social play between children of single and dual parent households? Is imaginative and social play significantly related to the mother's stress? A third relationship related to imaginative and social play with regard to the mother's attitude. Finally, the interactive effects of family structure, maternal stress, and the mother's attitude regarding play were examined with regard to children's imaginative and social play.

Subjects

The participants in the investigation included 40 children and their mothers from State College, Pennsylvania, which is an academic community, and the site of Pennsylvania State University. The children in the study ranged from 4 years to 5 years and 11 months. The forty subjects employed for the study were selected on the basis of the following criteria: (a) age range between 4 years and 5 years and 11 months, (b) single or dual parent household, (c) Caucasian, (d) no severe physical or psychological handicaps, and (e) only children in the home. Forty mothers participated in the study. Twenty were from dual parent households, and 20 were single parents. All parents reported that their dual or single-parent status had been stable for at least two years. All parents were employed at the time of the study, and none reported attending counseling or therapy sessions. In addition, no parents reported participating in any support groups (e.g. Parents Without Partners). All parents in the study completed a minimum of 10 years of education.

Children's Observational Instruments

Two observational instruments were used to collect data on the play of children. One assessed social play, and the other other measured imaginative play. Social levels of play were measured by the Peer Play Scale (PPS) designed to reflect five levels of social behavior during free play (Howes, 1980). Howes' (1980) Peer Play Scale was used to assess the developmental sequence of children's play from noninteractive parallel play to interactive, reciprocal social play. Howes tested the scale on 28 children between the ages of 18-43 months. Levels of play were calculated using the Guttman analysis. A coefficient of reproducibility of 91% and a coefficient of coefficient of scalability of 69% were found. The scale examined children's play behavior in relation to classroom condition and sibling status. Two independent coders rated the children's play. Two interobserver reliabilities were calculated. Her first pair of observers obtained a KAPPA statistic of 0.874. The second pair of observers obtained a KAPPA statistic of 0.766 (Hubert, 1977).

The quantity and quality of imaginative play was assessed using the Play Observation Scale (POS) (Yawkey, 1978).

The Play Observation Scale developed by Yawkey (1978) involved the systematic rating of children's free play behavior. Specifically, the rating involved knowledge about the child's (a) motor and language skills, (b) social interactions, and (c) underlying conflicts, and concerns (Piaget, 1962). The instrument was developed from Piaget's (1962) conceptual framework of play progressing from simple to more complex. Four broad categories included:

- (a) Sensorimotor Play
- (b) Simple Language
- (c) Make-Believe or Imaginative Play
- (d) Reality Play

A fifth category of behavior was developed and used in the present study for both instruments. This category was labeled as the "non-play" behavior. A non-play behavior was coded when a child did not engage in any play behavior, but was observed staring or wandering.

The face validity for the instrument was established by Yawkey (1978) through an evaluation by 20 Pennsylvania State University Early Childhood Education graduate students. Each graduate student evaluated the individual items of the instrument, the play category descriptions, and provided comments and suggestions to the investigator. The specific content validity of the instrument was further established through a taxonomy of play for the POS.

Interrater reliability for the POS was established in other studies (Gomez, 1982; Jones, 1983; Trostle, 1985). Gomez (1982) used the POS investigating the play of Mexican-American four-year-old children and the reliability coefficients ranged from .80 to .96. Similarly, the range of reliability coefficients was .78 to .85 in the Jones (1983) investigation. For the second reliability test, the mean reliability coefficient of the six pairs of observers in the Jones study was .80 (Jones, 1983). Unlike the Gomez study (1982), Jones' subjects were white Caucasian four-year-olds.

Parent Measures

Appointments with each parent were scheduled, and the following instruments were administered:

- (a) Parent's Attitude About Play and Development (PAPAD) (Johnson, 1983)
- (b) Home/Play Environment Inventory (HPEI) (Bishop & Chace, 1971)

In addition to these two attitude questionnaires, the mother's stress level was measured through the Parent Stress Index (PSI) (Abidin, 1983) which

was designed to reflect the level of stress experienced by the mother. All parent measures were administered individually to the parent in order to reduce collaboration of answers with spouses, and friends.

Attitudes about play and development (PAPAD) were assessed in an effort to better understand how parents value and perceive children's development. The PAPAD instrument assessed general attitudes about school and play activities and used a paired comparison format requiring the mother to select one of two activities, as the more preferred for preschool children. The HPEI developed by Bishop and Chace (1971) focused on attitudes about play situations, types of toys, rights of children in play, relations among children and parents in play. The questionnaire included 20 questions on a five point Likert type scale ranging from strongly agree to strongly disagree. Fourteen questions about children's activities were rated from never to regularly, 16 questions addressed issues of physical space and parent activities. The Parent Stress Index was developed by Abidin (1983) and assessed the personal stress of the individual in order to identify those stressors associated with dysfunctional parenting. The instrument was designed on the assumption that stress is multi-dimensional and three major sources of stress exist. These are: (a) child characteristics; (b) mother characteristics; and (c) situational/demographic-life stress.

Design

The investigator examined the relationships of three independent variables of structure, stress, and attitude to two dependent variables of children's imaginative and social play. Family structure was represented as

either a single or dual parent household. Stress was measured by the Parent Stress Index, and expressed as a child domain score, a parent domain score, and one total stress score. Attitude was measured by two questionnaires (i.e., PAPED, HPEI).

Procedures

Once the parents returned the consent forms indicating their interest in the study, they were contacted for a personal interview. The interviews were conducted and the attitude questionnaires were administered at the day care centers. The interview and the questionnaires lasted approximately 50 minutes. Once the questionnaires were completed, the interviewer and parent discussed the study for five minutes to address any concerns or questions. Following a ten-minute break, the Parent Stress Index was introduced, explained, and administered. The completion of the PSI required approximately 30 minutes. The interview and instrumentation time for each parent lasted a total of 80 minutes.

Once the consent forms were returned, the children were selected from six Title XX Day Care Centers which were headed by the same administrative agency, Child Development Council, Centre County, Pennsylvania. The seventh day care center was a privately-owned day care facility. At all six Title XX Day Care Centers, classrooms consisted of multiple age groups, and shared similar philosophies of child care. For example, each center contained six distinct learning areas separated by bookshelves or partitions. Small group activities, free play, large and small motor activities comprised the center schedules. However, at the Private Day Care Center, classroom space was not

divided into specific learning areas, and shelf space for materials was adequate. Classroom materials in the housekeeping and block areas in all seven centers included a wide variety of props, dress-up clothing, cooking utensils, and manipulatives.

Results

The analysis of the data involved four major processes: (a) preliminary descriptive analysis, (b) multivariate analysis of covariance, (c) correlational analysis, and (d) multivariate analysis on each of the attitude scores.

The relationship of play and family structure was tested using multivariate analysis of covariance with the Peer Play Scale and the Play Observation Scale as dependent variables and structure as the independent variable with age, income and education as the covariates. Results showed that there was no significant main effect for family structure ($F(12,25)=0.69, p > 0.75$). No significant differences were found in imaginative play or social play levels between children of single parent families and children of dual parent families when only structure was examined.

The relationship of play and maternal stress was tested using correlational analysis. Correlations were examined between children's level of imaginative and social play and the mother's level of stress partialling out the child's age, family income, and the mother's educational level. Results showed no significant correlations between children's level of imaginative play as measured by the POS and the mother's level of stress. However, for the social levels of play on the PPS, there were five significant

correlations out of 18 found in the results. Partial correlations between stress and children's play are presented in Table 1.

Insert Table I Here

Significant positive correlations were found between complementary and reciprocal play and mutual awareness, Level 4, and child domain stress ($r=.31$, $p < .05$), parent domain stress ($r=.36$, $p < .05$), and total stress score ($r=.32$, $p < .05$).

Significant negative correlations were found between complementary-reciprocal social play, Level 5, and stress related to behaviors, child ($r=.40$, $p \leq .01$) and for total stress ($r=.38$, $p \leq .01$).

The relationship of children's play and maternal attitude was tested using partial correlational analysis. Correlations were examined between children's level of imaginative and social play (POS and PPS) and the complementary/reciprocal social play (Level 5), and the child stress domain, and the mother's total stress score on the PSI. Only one significant negative correlation was found between convergent play on the PAPAD and the reality play category of the POS, ($r=.31$; $p<.05$). However, for the PPS, five significant correlations were found between the PPS social play levels and the PAPAD. Three negative and two positive correlations were identified. Non-play was significantly related to convergent play ($r=.39$; $p<.01$), and negatively related to academic content knowledge, ($r=-.35$; $p<.05$). level 2 play, which represented parallel play with mutual regard and the mother's attitude favoring convergent play were negatively related ($r=-.31$; $p<.05$).

Level 5 play which represented social interactive play with language was negatively related the attitude fovoring academic process knowledge ($r = -.36$; $p < .05$).

Non-play behaviors on the Peer Play Scale (PPS) were found negatively related to academic content knowledge. However, non-play was positively correlated with the mother's attitude favoring convergent play activities. Parallel play with mutual regard was negatively correlated with convergent play. A significant negative correlation was found between complementary/reciprocal social play, level 5, and academic process knowledge. However, Level 5 was positively related to convergent play. Partial correlations between the PAPAD and the imaginative and social play levels are presented in Table 2.

Insert Table 2 Here

HPEI

The Home Play Environment Inventory assessed parent attitude towards play and were expressed in three scores: (a) permissiveness, (b) sports, and (c) parent's participation in play. Partial correlations were computed between the three HPEI attitude scores and children's imaginative and social play measures. Partial correlations between the HPEI and the imaginative and social play measures are presented in Table 3.

Insert Table 3 Here

Results showed a significant negative correlation between parent's valuing participation in play and the simple play category on the POS ($r = -.39$, $p \leq .01$). No other significant correlations were found between the HPEI and the POS or the PPS. No significant correlations were identified between the PPS and HPEI.

Significant interactive effects of family structure, maternal stress, and the mother's attitude regarding play on the level of children's imaginative and social play was tested by multivariate analysis of covariance. Because of the large number of measures and relatively low number of subjects, it was impossible to include all main effects and interactions in a single analysis. Instead, seven separate MANCOVA's, each including the independent variables of family structure, stress (total stress score), and one of the seven attitude measures were computed. For the purposes of analysis, stress scores and attitude scores were trichotomized as high, medium, or low based on the suggested norms of the instrument. Each MANCOVA followed a 2 (structure) X 3 (stress) X 3 (attitude) design. The dependent measures were scores obtained from the POS and PPS. The seven attitude scores included (A) academic content knowledge (ACK), (b) academic process knowledge (APK), (c) convergent play (Conv. play), (d) divergent play (Diver. play), (e) permissiveness (Permiss.), (f) sports, and (g) parent's participation in play (Partici.).

No significant overall main effects for imaginative and social play were found in six of the seven computed MANCOVA's. The nonsignificant MANCOVA's were for the attitudes of permissiveness, sports, academic content knowledge, academic process knowledge, divergent and convergent play.

The results for the MANCOVA involving the attitude of parental participation in children's play were significant ($F(12,16) = 8.71$, $p < .0001$).

Analysis was conducted on each of the dependent play measures. For the POS, these included: (a) non-play behavior, (b) simple, (c) imaginative, and (d) reality. For the PPS, the dependent measures are: (a) non-play behavior, (b) simple parallel play, (c) parallel play with mutual retard, (d) simple social play, (e) complementary/reciprocal social play.

Univariate tests followed a 2 X 3 X 3 design which included structure, stress, and attitude for each dependent variable of play. The results showed significance on three dependent play measures (p 's < .05), non-play and reality play (POS) and complementary/reciprocal social play (PPS). A summary of the Univariate results are presented in Table 5.

The interaction of structure, stress, and the attitude of parent participation in play was found significant (p < .05) with regard to non-play behaviors (POS). Results of the Tukey WSD follow-up test revealed that children from families where the mother reported high stress and valued moderate participation, the non-play mean for dual-parent children was higher than for single-parent children.

Discussion

The first analysis looked at imaginative and social play differences in children of single and dual parent households. For clarity, the discussion of results is presented in ____ parts: 1) children's play and structure; 2) children's play and maternal stress; 3) children's play and maternal attitude.

Children's Play and Structure

The initial analysis examined differences in family structure and revealed no significant differences in children's play in single- and dual-family households. Results showed that children from single-parent homes demonstrated similar play levels when compared to children of dual-parent homes.

However, upon subsequent analyses of the data, results revealed significant interactions between stress, structure, and attitude with regard to play behaviors. The complexity of the child-family relationship was more adequately understood when variables beyond structure were considered in the investigation. The results support the idea that play behavior is better understood in context of social interactions and the child's changing environment (Lerner & Spanier, 1978). The quality of the parent/child relationship and the home environment involves multiple concerns beyond the number of adults in the home (May, 1985). Certainly, the reduction of adult accessibility, income, and attitude changes which are frequent consequences of divorce affects the child's play behavior.

Children's Play and Maternal Stress

Results of this study point out that children from single- and dual parent households exhibit different play behaviors with regard to varying levels of stress. A mother experiencing high stress certainly has a different set of interactions than a mother with low levels of stress. Weinraub and Wolf (1983) examined stress and parent-child interactions and found that stress was related to less positive mother-child interactions, poor communication, and less parental nurturance.

The incidence of high stress among both single- and dual-parent families may be due to the reported difficulty of raising young children since all children were of preschool age. Research conducted by Pasley and Gecas (1984) reported that in the majority of 136 families interviewed, the preschool years were considered the most stressful and burdensome. In general, the parents believed that they were at fault for the difficulty encountered with their children. Again, this notion of the parent perceiving themselves as inadequate is reflected in the moderate to high parent domain scores of the present study.

Children in dual-parent homes with reported high stress expressed significantly more non-play behaviors than children of single-parent homes. On the other hand, children with high stressed single-parents had slightly higher means for fantasy play than dual-parent children when the stress level was high.

These results seem to support existing research that identifies certain necessary conditions for fantasy play (Singer, 1977; Sutton-Smith, 1979). For example, fantasy play in a solitary mode involves the notion of imagining, directing and being deeply engrossed in the business of play. When there is only one child in the home, the play is conducted, and maintained by that child with perhaps one or two adult co-players. In a dual-parent household, the notion of co-players is more likely to occur than in a single-parent home. Since the present sample contained "only" children, the co-players are generally one or both of the parents.

For the single parent with high stress, the level of interaction is likely to decrease (Pasley & Gecas, 1984) where the quality and quantity of

the interaction between the parent and child is affected by the increased responsibilities of the single parent. In the single-parent home, there is no other co-player for the child to interact with when the mother is highly stressed and uninvolved. Fantasy play may well provide the single-parent child a necessary escape and coping behavior.

For the high level of non-play in children of intact families, research (Lamb, 1982; Colletta, 1983) indicates that accessibility to the parent as critical for early childhood development. In the intact family, the mother may be experiencing high stress levels, but there still exists another individual for the child. The additional adult is available to the child for comfort and interaction. The high level of non-play presents the problem of definition of specific behaviors involved. Since non-play in the present study included behaviors that were noted as on-looker or wandering behaviors, it is difficult to assess without further refinement.

Weinraub and Wolf (1983) have shown that children develop coping abilities frequently expressed in fantasy play when the situation is stressful. For single-parent families, children tended to play more and fantasy play was more frequent when the mother reported high stress. This finding is supported by Singer (1973) who argued that young children require private time for rehearsal, and fantasy play. He noted that this private time allowed children the time and space to express emotional concerns.

Stress as a main effect for complementary/reciprocal social play revealed that for children in dual- and single-parent homes with moderately stressed mothers, the mean for complementary/reciprocal play and social play was higher than for children with high stressed mothers. Differences in reality play

were also identified among children of single- and dual-parent families. The interaction of structure and the attitude of parent participation revealed that for children with mothers who valued moderate participation, single-parent children had significantly higher means for reality play than children of dual-parent households.

Given high levels of intervention on the part of the parent, it is not surprising that the child fears loss of control as the director in the play frame. With an attitude favoring high involvement, the child may feel constrained by adult rules and conventions. This finding supports previous research studies (Sutton-Smith, 1979; Cornelius & Yawkey, 1985) that have focused on the importance of encouraging but not directing children's dramatic and fantasy play.

The Relationships of Stress and Attitude to Play

All parents reported high or moderate value for parent participation in play. This findings supports past research that identifies the preschool years as the ones in which parents are frequently concerned and involved in their children's play (Hartup, 1978). The reported high stress of the mother may increase the frequency of Level 4 play which may provide an escape for the child, while at the same time making few cognitive and social demands on the child for level 4 does not require continuous language in the social play.

This particular relationship seems to parallel the negative correlation identified between Level 5 and stress. For complementary/reciprocal social play (Level 5), language and social interaction between players are involved in the play. As the mother's stress level increases, the less the child

engages in the higher form of social play, Level 5. Other research studies (Pasley & Gecas, 1982; Hetherington, Cox, & Cox, 1979) have shown that parents of high stress demonstrate more restrictive, authoritarian parenting styles, and the children are frequently withdrawn.

Four significant correlations found between the Parent's Attitude About Play and Development (PAPAD) and children's imaginative and social play levels. Results show that when mothers favored convergent play, children demonstrated less reality bound play. Similarly, the negative correlation between academic content knowledge and non-play behavior suggests that when mothers emphasize content knowledge, the child does exactly the opposite and plays. This natural, inner desire to engage in play behaviors rather than adult directed content activities is well documented (Freud, 1950; Erikson, 1950).

Three other significant correlations involving convergent play were identified in the results. Level 4 and 5 were negatively related to the mother favoring convergent play activities. Results suggest that when the mother's attitude strongly favors very focused activities with specific outcomes, children will engage in complementary/reciprocal social play but not simple social play. Given the social and cognitive demands of Level 5, it is not surprising that the play may reflect more reality play behaviors since it involves other players and involves agreement and cooperation. Whereas, the simple social play which does not necessarily involve cooperation and interaction of other players is negatively affected when a mother emphasizes specific outcomes.

On the Home Play Environment Inventory (HPEI), parent's attitude of participation and simple play (POC) were negatively related. This result is

consistent to the negative relationship found with Level 2 (PPS) and convergent play. On the HPEI, adult participation appears to decrease the likelihood of simple play where the child is exploring, repeating physical movements, and playing with language. Previous research (Sutton-Smith, 1971; Rubin, 1980) indicates that adult intervention in play can inhibit the child's natural play style and free expression.

Given the significant interaction of family structure, stress and parent's participation in play, further research is needed to explore the specific stressors and their relationship to play. Given the negative correlation of social play and the mother's stress level, it would be extremely valuable to examine specific stressors and the child's level of play over time to see if children's development is negatively affected by maternal stress.

As a final consideration, the mother's attitude regarding her specific role as a parent in her child's play needs further examination. Since the role of participation of play was found significant, it would be especially important to delineate specific roles and attitudes parents have regarding play. If specific attitudes and parenting behaviors could be identified as important correlates of high social and cognitive play levels, educators and parents would gain a better understanding of children's social and cognitive development.

Table 1

Partial Correlations Between Children's Imaginative and Social
Play and Maternal Stress Controlling for the Child's
Age, Family Income, and Mother's Educational Level

	<u>Maternal Stress</u>		
	Child Domain	Parent Domain	PSI Total
<u>Play Observation Scale</u>			
No Play	-.12	-.06	-.10
Simple	-.26	-.05	-.18
Fantasy	.18	.00	.10
Reality	-.17	-.06	-.13
<u>Peer Play Scale</u>			
No Play	.08	.01	.05
Parallel Play	.14	.17	.18
Parallel Play with Mutual Regard	.18	-.07	.05
Simple Social Play	.16	.03	.11
Complementary and Reciprocal Play with Mutual Awareness	.31*	.32*	.36*
Complementary and Reciprocal <u>Social</u> Play	-.40**	-.26	-.38**

*p < .05

**p < .01

Table 2

Partial Correlations Between Children's Imaginative and Social Play Levels and Academic Content Knowledge (ACK), Academic Process Knowledge (APK), Convergent Play (CP), and Divergent Play (DP) Measured by PAPAD Controlling for the Child's Age, Family Income, and Mother's Educational Level

<u>Parent Attitude About Play and Development</u>					
	ACK	APK	CP	DP	N
<u>Play Observation Scale</u>					
Non-Play	.02	.21	-.19	-.06	40
Simple	.00	.16	-.86	-.10	40
Fantasy	.04	.26	-.05	-.18	40
Reality	.09	.08	-.31*	.00	40
<u>Peer Play Scale</u>					
Non-Play	-.35*	-.36	.39**	.22	38
Parallel Play	.00	.20	-.29	.58	38
Parallel Play with Mutual Regard	.13	.15	-.31*	-.06	38
Simple Social Play	-.06	.22	-.04	-.10	38
Complementary and Reciprocal Play with Mutual Awareness	.08	.18	-.18	-.13	38
Complementary and Reciprocal <u>Social</u> Play	-.05	-.36*	.10	.10	38

*p < .05

**p < .01

Table 3

Partial Correlations Between Children's Level of Imaginative and Social Play and Permissiveness, Sports, and Participation in Play as Measured by the HPEI Controlling for the Child's Age, Family Income, and the Mother's Educational Level

	<u>Parent Attitude About Play and Development</u>			
	Permissive	Sports	Participation	N
<u>Play Observation Scale</u>				
Non-Play	-.17	-.07	-.20	40
Simple	-.12	-.27	-.39**	40
Fantasy	.15	.19	.21	40
Reality	.24	-.19	-.20	40
<u>Peer Play Scale</u>				
Non-Play	-.19	.01	-.04	38
Parallel Play	-.09	.23	.15	38
Parallel Play with Mutual Regard	-.04	.03	-.09	38
Simple Social Play	-.09	.10	-.08	38
Complementary and Reciprocal Play with Mutual Awareness	.29	.16	.28	38
Complementary and Reciprocal <u>Social</u> Play	-.06	-.26	-.28	38

*p < .05

**p < .01

Table 4

Summary of MANCOVA Results for Attitude, Stress, and Structure
on Play Measures Controlling for Child's Age, Family
Income and Mother's Educational Level

Attitude Measure	Results	
<u>Parent's attitude about Play and Development</u>		
Academic Content Knowledge	NS	p < .1922
Academic Process Knowledge	NS	p < .4453
Convergent Play	NS	p < .6581
Divergent Play	NS	p < .7298
<u>Home Play/Environment Index</u>		
Permissive	NS	p < .8520
Sports	NS	p < .3600
Parent's Participation in Play	SIG	p < .0001

Table 5

Univariate Results for Structure, Stress, and the Parent's Attitude
Regarding Participation in Play on Children's Play Controlling
for Child's Age, Family Income, and the
Mother's Educational Level

Attitude Measure	Results	
<u>Play Observation Scale</u>		
Non-Play	Structure	p < .05
	Structure x Stress	p < .01
	Structure x Stress x Participation	p < .01
Simple	NS	p > .96
Fantasy	NS	p > .93
Reality	Structure x Participation	p < .01
<u>Peer Play Scale</u>		
Non-Play	NS	p > .70
Simple Parallel	NS	p > .10
Parallel with		
Mutual Regard	NS	p > .49
Simple Social Play	NS	p > .87
Complementary/		
Reciprocal Play	NS	p > .70
Complementary/		
Reciprocal Social		
Play	NS	p < .05

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